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Description of FR2491322

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The present invention relates to a dishwasher provided with a tank in which air put in circulation by a ventilator to dry the crockery is then dehumidified in a system of conduits and heated by an appropriate device in order to be again uses.

In a dishwasher, of the same kind, known from the German model of utility n° 71 10.279, the elements used to dry the crockery occupies an excessive space. Thus in the course of the system of conduits conveying the air, it is above the tank a filter with vapor and on the side a device of heating. The system of conduits extends moreover at a certain distance beside the tank, from which the ventilator is also enough distant.

The invention has as an object a dishwasher of which the elements being used for drying are laid out in a compact way and simplifying the mounting, without one having to increase the volume of the machine or to reduce dimensions of the tank. This dishwasher is characterized by the fact that the system of conduits extends, on the one hand, between a lateral wall of the tank and the coating of the machine, is placed at low distance of the aforesaid wall, by its section comprising the inlet opening, located on the side of the tank, like by its other section containing the air outlet opening and, on the other hand, in the free space located below the bottom of the tank by its middle section comprising the ventilator and the device of heating. It results this advantage from it that the structural components of predetermined form and volume that are the ventilator and the device of heating are placed in the machine at the place where it is in any case free place, while single run in the narrow slit ranging between the tank and the coating of the machine the sections of conduits, easily adaptable as for the form of their section.

The mounting is simplified particularly if the system of conduits constitutes a part of only one plastic part on which by flanges the ventilator and the device of heating are secured.

One obtains, through the tank, a guidance of the air which supports the result of drying it, according to another possible feature of the invention, the inlet opening of the air in charge of moisture is in the upper zone of the tank and, on the other hand, the outlet opening of the air heated in the low zone.

A favourable solution as for humidification of the air and with the evacuation of the condensate lies in the fact that the section of the system of conduits moving downwards starting from the inlet opening is arranged in a vertical tube of condensation with a collecting pocket for the condensate of which an evacuation emerges in the tank.

Following a last possible beneficial extension of the invention, the vertical tube of condensation is insulated heat compared to the wall of adjacent tank. From where the advantage that, in consequence of the suppression of the heating of the vertical tube of condensation by the tank, the hot air extracted from this last is déshumidifiable in a relatively strong proportion.

The invention will be better included/understood using the detailed description of a taken embodiment like example nonrestrictive and illustrated schematically by the annexed drawing, on which figure 1 is a front view of a dishwasher with indication of the hot draught being used for drying of the crockery in the open tank

figure 2 is a lateral sight of the taken machine in the direction of the arrow II, figure 1, as well as system of ventilation shafts ranging between the tank and the coating of the machine, this last removed on figure 1.

The domestic dishwasher 10 comprises a tank 11 in the shape of box provided with a front door 12 hinged.

The aforementioned tank 11 contains two baskets 13 and 14 to receive the crockery to be cleaned, not represented. Pendent the execution of a program of rinsing, one sprinkles the crockery of liquid appropriate poured in the tank 11, in which the drying of the cleaned crockery is carried out, with fine of the program, in mode of circulation of heated air.

The system of conduits 17 comprises a first tron idiot 20 which hand of an inlet opening 21 of the hot air in charge of moisture placed in the upper zone 16 of the tank and extends until in the free volume included/understood below the bottom 22 of the tank. The middle zone of this section 20 is arranged out of vertical tube of condensation 23 comprising for the liquid digest a collecting pocket 4 whose an evacuation 25 emerges in tank 11. The vertical tube of condensation 23 is insulated compared to the adjoining lateral wall, that from straight 18 of the tank. One thus manages to maintain the relatively low dewpoint for the condensation of the moisture which contains the hot air and thus to dehumidify the air heavily.

In its way, indicated by discontinuous arrows, through the system of conduits 17, the air passes in a middle tronson 26 placed below the bottom 22 of the tank and containing a ventilator 27 of carrying in circulation air and a device of heating 28. The system of conduits 17 being advantageously formed of a part out of plastic of only one piece, for example molded by blowing, ventilator 27 and the device of heating 28 are secured by flanges on corresponding openings of the middle section 26. This middle section 26, the system of conduits 17 continues in another section 30 directed upwards and being

completed by an outlet opening 29 in the low zone 15 of the tank.

Ventilator 27, in function pendant drying, absorbs air in charge of moisture by inlet opening 21 in first section 20 of the system of conduits. After its deshumidification in the vertical tube of condensation 23, the aforementioned air arrives at the middle section 26 of the system of conduits 17, section in which it is heated by device 28.

This dry hot air is injected by ventilator 27 in tank 11 with through the outlet opening 29 of section 30. The hot air sweeping the cleaned crockery causes rapid and supplements evaporation of the remainders of liquid adherent to the magpie these of crockery.